N.A.C.A. BULLETIN

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EDITORIAL DEPARTMENT NOTE

The attainment of low product costs and prices with high income to labor is largely dependent on the ability of industry and labor, working together, to increase labor productivity. High on the list of tools for accomplishing this objective is incentive compensation.

GILBERT M. FITZGERALD, who writes on "Sensible Wage Incentives" in the first article of the issue, is a Partner of the firm of Card, Fitzgerald & Leghorn, Management Consultants, of Houston. Educated at the Drexel Institute of Technology and the University of Pennsylvania, Mr. Fitzgerald served with the Campbell Soup Co., Montgomery, Ward & Co., and the Glen L. Martin Co., prior to the formation of his present firm in 1944.

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Case study descriptions of company practice have always been popular with readers of the *N. A. C. A. Bulletin*. Our second article provides an interesting description of the way in which The Dobeckmun Co. of Cleveland uses forecasts and standards to obtain management control of all operations.

ROY L. BRITTAIN, the author of this article, is Comptroller of The Dobeckmun Co., where he has been largely responsible for development of the methods he describes. Prior to joining his present company in 1933, Mr. Brittain served for 13 years with the Ferro Machine and Foundry Co. of Cleveland.

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Perhaps, as inferred by the title of our third article, service department costs have been subject to neglect both in industry and in accounting literature because they have been taken too much for granted. This article points the way to improved control of these important elements of cost.

ARTHUR T. CARUSO, the author of this article, has been associated with McKinsey & Co. of Boston as Principal since 1938. Prior to joining this firm, Mr. Caruso served as a Senior Staff Member of Scovell, Wellington & Co. He is a C.P.A. and a fellow of the Massachusetts Society of C.P.As.

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Articles published in the *Bulletin* present many different viewpoints. In publishing them the Association is not sponsoring the views expressed, but is endeavoring to provide for its members material which will be helpful and stimulating. Constructive comments are welcomed and will be published in the Forum Section of the *Bulletin*.

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SEPTEMBER 15, 1946

SENSIBLE WAGE INCENTIVES

by GILBERT M. FITZGERALD, Partner, Card, Fitzgerald & Leghorn, Houston, Texas

A SURVEY concerning labor efficiency covering one thousand manufacturers reveals that 70 per cent of the manufacturers have reason to believe that the effectiveness of their labor is now less than during prewar years. The experience of our own firm in the Southwest has shown that a general drop of approximately 30 per cent has taken place in the past five years. This has been determined in those plants where comparable records were available. During the same period hourly wages have made a rather phenomenal advance.

One of the principles of economics in American business has always been that the value of an hour's labor increases in proportion to the amount of production accomplished. This principle has operated for the executive as well as for labor. It is interesting to note that although we are operating with different economic systems, this principle has also been recognized in Russia.

Wages and Labor Productivity

Today we witness tremendous pressures applied toward changing this basic concept of relating wages to production. Management is being urged to increase wages without a corresponding increase in production. Unfortunately this school of thought has been aided by the Federal Government. The seriousness of this problem is brought out by the fantastic "studies" that received wide publicity and certain public acceptance. For example, Mr. Reuther's UAW-CIO study and the Federal Government's study of the automobile industry are cases in point. These studies supposedly proved that the industry can substantially increase wages, that they can sell the product at prewar prices, and that the industry will earn greater profits than they did in 1942. These statements were too much even for the more responsible labor leaders, who privately refuted them. Nevertheless, they do indicate a dangerous trend in thinking.

Wages and Prices

The obvious and easy answer to the present wage increases has been a proportionate increase in prices. The chain of events set off by a price increase is familiar to all of us. Certainly we are not opposed to labor or anyone else increasing their earnings. We

are all interested in obtaining increased earnings. But higher incomes in themselves do not necessarily mean a high standard of living. Many of the boys who early went into the armed services have learned that. You probably have friends as I have who were making a modest salary when they left their jobs early in 1942. Several have recently returned and have received very substantial increases in income. They have been surprised and disappointed to find that regardless of the salary increase their standard of living is not as high as before the war. Much of this fallacious thinking on wages can be corrected by asking one question. What has been the greatest factor in making the American way of life the envy of the world? It has been the increasing effort of American business toward production of improved products at lower cost. Lower cost, greater markets, and the universal use of better products by more people has made our people rich, not necessarily in terms of money, but in terms of finer living and all that is implied by the term "higher living standards."

For too many years in the recent past lower costs has been given little thought in the majority of businesses. Today business is in a turmoil of uncertainties. Yet the more far-seeing executives are already planning for the return of competitive markets. In our area manufacturing facilities have been greatly enlarged in the past five years. Many companies have increased their engineering and research staffs. Five years ago some manufacturers had no real competitive worries. They built specialized items; at most they engaged in quality competition. Tomorrow's competition is going to be quality and price competition and it will be rough.

Problem of Wage Incentives

With this background it is easy to understand why many top management groups are today looking toward wage incentives with renewed interest. In any such management group and in any such discussion will be found an executive who has been hurt, or who knows some company that was hurt sometime previously, by an incentive plan. Yes, unfortunately the road which incentives have traveled has been rocky. Probably no other management tool has been so little understood or so generally misused. It is for this reason that a concern should give it intelligent consideration before establishing such a plan.

The theory of wage incentive is certainly simple enough. It is nothing more than extra compensation paid an employee for any-

thing he produces over and above a fair day's work, when he has performed his job in the specified manner and produced accepted results.

While it is a negative approach, it may be best first to examine why the application of this simple theory has failed in certain cases. Failures due to piece rate cutting, unfair time studies, standards based only on past records, and other deceptive or unsound practices will not be discussed. Rather we are interested in failures when the plan was being honestly presented. Analysis of plans that have been discarded reveal the weaknesses to which their failure was attributed. These are presented below.

Faulty Installation and Maintenance of System

The first weakness is the failure to understand the full significance of an incentive plan and consequent lack of preparation for its installation. While it is difficult to line up the reasons for failures in the order of their importance, this failure is undoubtedly the most outstanding. To go out on a job, take a study, and set a standard, is the shortest cut known to create management headaches. First, the real point of the entire incentive idea is missed, which is the elimination of waste. Second, where this has been done, sooner or later an ingenious worker quickly learns to improve the job, at no greater effort to himself. He then beats the standard so badly that a whole series of labor problems develops. Wage incentives are the end result of the plan. They should be preceded by surveys of layout, production planning methods, and equipment.

No system can run itself; it must be properly maintained after its installation. Just as a good tool needs periodic sharpening, the incentive plan must be constantly kept up to date. Where a plan had been discarded because some employees' earnings had become excessively high, it was found that the standard no longer pertained to the job. Improvements had been made but the standards were left unchanged.

In this connection may be mentioned the fact that there was in many cases a failure to tie in quality standards with production standards. It was found that the failure was due not to the incentive plan, but to the companies' lack of specified material and quality standards. A good incentive is always tied into acceptable quality standards.

Incompetent Supervision

Another weakness of many incentive plans is the failure to place the installation or maintenance of the program in charge of qualified competent men. Many of us remember the "efficiency experts" that followed the first world war. It took years to undo the damage done by these untrained, unqualified, and sometimes openly dishonest men. Today's management should take grim warning that another such period is coming. Men who are qualified neither by education, by training, or by experience are setting themselves up as consultants. Wherever these quacks have practiced there have been employee discontent, strikes, and production difficulties. While management is naturally interested in making the installations at as reasonable a cost as possible, the caliber of the men making or maintaining the plan should not be lowered. Some plans were found discarded because they involved too much paper work or the rework and spoilage increased. In such cases, however, it was not the principle of wage incentives, but the poor installation of the plan that caused the failure.

Employee Education and Pay Schedules

A third weakness of some plans was the failure properly to prepare all employees of the organization for the plan. This included all levels of the organization, from the top executive to the workers. The first step, a carefully written policy and procedure covering all phases of the plan was often overlooked. Other failures were traced to lack of understanding by the supervisors of the program. All members of the organization should be shown all there is to see about the plan. Wherever mystery surrounds the installation there will be trouble.

Where pay rates are not in proper relative balance and there has been no job evaluation of the pay schedule, a wage incentive is likely to emphasize existing inequities. This has distorted some plans badly enough to cause their abandonment. The coverage of the incentive plan has also affected the wage schedule. Where incentives are installed for some workers and other groups are not given equal advantage for increased earnings, grievances will develop. The plan should be given as complete coverage as is feasible.

An understanding of these causes that have resulted in the failure of incentive plans in other plants will help management in assuring the success of their own plan. It is easy to understand why many executives are confused or actually afraid of wage incen-

tive. Consider that there are over twenty-five plans that have been considered different enough to be given a specific name by their originator. Some of these plans are so complex that engineers have difficulty in working with them. Is it any wonder that the uninitiated are frightened at such an array of slide rule gymnastics. The trend for some time has been away from the complex type of plan. What industry wants is a simple, understandable plan. This is what I choose to call a sensible wage incentive.

Types of Incentive Plans

I do not want to give the impression that I recommend any one plan. Incentive systems do not come in cans, and to try and use a set plan even within a given industry is dangerous. All the recently mentioned names with minor variations fall into the following five basic plans.

1. Measured day work
2. Multiple time plans
3. Halsey Constant Sharing Plan
4. Rowan Variable Sharing Plan
5. 100 per cent time premium or piecework

Analysis of the type of work, the plant's mechanical condition, the quality requirements, and the available production and time records will determine the plan most suitable for a given plant.

The foundation for sensible incentive plan can begin only after it is determined that an incentive plan is needed. That may sound so elementary as to be foolish. Only recently, however, an executive stated that he had decided to go ahead with a bonus plan to move production more rapidly through his shop. His case sounded reasonable, but a brief survey of his plant disclosed that his first trouble was lack of production planning. An incentive installed at that time would have been chaotic. Proper scheduling would substantially reduce his labor cost and prepare his shop for further savings through incentives.

Compensation Based on Production

Once it is determined that conditions warrant the incentive plan and that the organization is prepared for its use, certain fundamentals should govern its development. First of all, the plan must provide increased compensation in direct proportion to increased production.

Some of the early plans held back a portion of the employee's bonus earnings to provide a fund for the maintenance of the plan or to provide a bonus for the indirect workers. This practice gave the labor unions strong arguments against incentives. If the production standards are right then the worker deserves any gains he can make in bettering the standards. The individual incentive where the employee can actually see the results of his increased production is the ideal type of plan. This is not always possible and in its place a good group incentive comprised of related teams may be just as strong. In group incentive, caution must be taken to assure that the work assignment given the individual is fair and in balance to all other members of the group.

Standard Task

The task level, or the determination of what makes a "fair day's work" must provide the incentive to sustain increased employee output. This is one of the technical points in building an effective incentive plan. Many factors enter into the selection of the point that may be called normal or standard production. The standard output is the amount of production that management may fairly expect from the employee in return for the guaranteed hourly rate. This important factor is often overlooked by management and frequently misinterpreted by employees and their representatives.

In the majority of cases the savings to management made possible by an incentive plan are twofold: the increase in production from the preincentive level to the standard required and the savings in overhead expense. It is because of this that the savings made possible by production in excess of standard may well be passed on to the employee. The determination of a fair day's work must be correct. It can be too high as well as too low. Production requirements placed too high will kill incentive to produce; placed too low, the company is paying bonus for work that should be done as part of the regular day's production. Long experience has shown that the bonus earning required to make an incentive effective must be at least from 15 to 30 per cent. This spread in per cent is caused by the industry, type of work, area wage practice, and other reasons that make generalization difficult.

Basis for Production Standard

Production standards must be set by time study or determined from time study data. Some incentive plans in the past were set

on the basis of past performance or the shop foreman or superintendent's estimate. It is such plans that have bred distrust between the managers and the workers. Estimates, regardless of who makes them, do not establish the proper level of attainable production. Loose estimates can cost management their business; tight estimates will end in labor strife.

Careful time study offers the only sound basis for establishing production standards. The latter represent the time required to perform the job at normal speed plus allowances for personal needs, for necessary rest, and in some cases for unavoidable delays. Standards must reflect increased effective effort which may or may not be in proportion to increases in measured output. Standards so set by time study are economically and psychologically sound.

Many mistakes, resulting usually from ignorance, have been made in the name of time study. If time study consisted of no more than clocking a job and recording the results, industrial life would indeed be simpler. There are time study men today who probably feel they are qualified but who are making serious technical mistakes. For instance, one can still find standards determined by averaging actual watch readings and leveling factors. Some men discard inconsistent readings without determining why they were inconsistent and thus miss the whole field of cost reduction. Some studies are even set up on an over-all efficiency rating basis. Much has already been written about time study procedures and we will not attempt to review the subject here. However, management does need to understand that it is highly skilled, specialized work.

Job lot shops or specialty manufacturers often believe that the expense of maintaining standards through time study would not justify the cost involved. This would be true if it were necessary actually to time study each job. For such cases time study is used to develop standard basic data on a work element basis. For instance, the work may be warehousing. Obviously, time studies could not be made of all the possible combinations of moving and shifting boxes within the warehouse. Careful time studies will establish the basic time required to handle a single box in relation to weight, number of feet moved, and height stacked. The accumulation of a series of values to cover each element of work makes possible the compilation of a standard data table. From this table, given the number of boxes moved, the distance moved, their weight, etc., the standard time can easily and quickly be found.

Production Counts and Inspection Standards

Hand in hand with an incentive plan comes paper work. It would be absurd to say that a plan will not increase the clerical demands. Occasionally it is found that some reports credited to the incentive plan should have been kept all along. There always had been a need for them but the incentive plan made them essential. Arrangements for inspection and production counts must be clearly understood and certainly in writing for all concerned. A good incentive will increase quality of the product as well as quantity. Just as an inspector is used to check quality, so should there be some specific responsible individual to check output. In larger shops this is generally done by the timekeeper.

Incentive Pay Formulas

The actual calculation of pay should be as simple as possible for both the company and the employees. Each employee should not only understand how to compute his incentive earnings, but should also understand how the bonus factor is derived. The incentive plan should be tied in with the plant's budget and cost control program to prevent duplication of reports. Certainly it is important to make clear to each employee the difference between his base earnings and his bonus earnings for increased effort. This can be assured by listing the bonus payment separately on his check or even paying the bonus separately.

Where conditions warrant, an incentive can usually be designed for any type of measurable effort. How many times have we heard "Oh yes, incentives are good on production lines but they would be impossible in my business." Let me list a few of the more unusual jobs that I have seen successfully applied to incentive pay:

1. Making and matching paint to customers' shade requirements.
2. Testing radio tubes.
3. Conducting routine laboratory tests.
4. Preparing and typing bills of lading.
5. Sweeping streets—all weather conditions.
6. Hand-painting pottery vases.
7. Wiring radar fire control apparatus.
8. Altering men's ready-made suits to customers' fit.
9. Eviscerating and cleaning chickens.
10. Hand-blowing small glass items for medical trade.
11. Bookkeeping—maintaining stock records.

Some unions do not seem to have any uniform policy concerning incentive payment. In some companies they have cooperated in the installation to the point of proving to their own members the soundness of the plan. Other unions have been more backward in their acceptance.

A properly designed and applied wage incentive plan is an effective management tool. It will not substitute for good supervision, rather it will supplement good supervision. It will offer some solutions to the problem of more money for less work, for it pays only on increased productivity. Sensible wage incentive plans carefully administered and understood by all concerned will aid management in holding its place in the competitive industrial world.

Federal Reserve Board Tightens Regulation W—Effective September 3, the Federal Reserve Board's Regulation W will again apply to installment purchases up to $2,000 and will also apply to single payment credit purchases in the same range. The maximum maturity of credit granted is maintained at 15 months for automobiles and 12 months for the purchase of other durable goods but has been decreased from 18 to 15 months for all other installment loans.

The revision of Regulation W was undertaken by the Board in consideration of the currently expanding volume of consumer credit, accompanied by an upward surge of prices, and may serve to remind many accountants of the old problem of keeping sales paid for and keeping customers at the same time. The accountant is so situated that the effect of lagging remittances on financial position and the accompanying threat to profit and loss are promptly apparent. In addition, the accountant has always had the uncomfortable job of calling the situation to the attention of others. For those companies who are on a reserve basis in respect of bad debt deductions for Federal tax purposes, he is also the one who must clear increased provisions, which he may feel well justified, with the tax authorities.

FOAB Tax Remains at 1 Per Cent for 1947—The employers' and employees' shares, respectively, of the Federal Old Age Benefit tax will continue during 1947 to be 1 per cent of the gross pay of each employee up to gross pay of $3,000. The tax was frozen at the 1 per cent rate during the recent session of Congress, preventing an automatic increase to 2½ per cent on January 1, 1947.

STANDARDS AS A MANAGEMENT TOOL

by ROY L. BRITTAIN, Comptroller, The Dobeckmun Co., Cleveland, Ohio

THE Dobeckmun Company was formed in 1927 for the purpose of manufacturing cellophane products. Soundly organized, its growth has been steady. The most important feature of our organization setup, next to the board of directors, is the management committee.

Our executive vice president is chairman of this committee, whose other members are composed of the top executives of sales, production, product research, equipment research, and finance,—six members in all.

This body is the core of our entire control system, and from it emanate the arms of our management guidance; administrative, research, manufacturing, and selling. It is the final clearing house for all operating policies, forecasts, and budgets. It deals with actual data entirely upon the popularly accepted principle of modern industrial management, which is the rule of exception.

This committee meets regularly at two o'clock every Monday afternoon to review reports for the immediate past period, and to pass final judgment on plans for the immediate future.

Operating Committees

In moving down our ladder of organization structure we next come to our operating committees. These committees are three in number:

1. Marketing committee
2. Production planning committee
3. Plant operations committee

Responsibility for the discharge of their obligations rests with the chairmen of the respective committees. However, open and frank discussion of the questions involved, permitting the most fluid freedom of action, must be maintained among the members of each committee. A brief statement of the functions of each committee will serve, I believe, to illustrate what we mean by the principle of management by the conference method.

Although our director of sales is a member of the marketing committee, the sales promotion manager is its chairman. Its other members consist of the managers of our two sales divisions (pack-

aging and industrial), the field sales personnel manager, the two managers of the product research and equipment research departments, and the comptroller. One of the reasons that the sales promotion manager is chairman of this committee is so he may officiate at all subcommittee activities, which must be reported back to the main body of the marketing committee. These activities primarily have to do with regular and special market surveys which, of course, give factual knowledge of customer needs, market potentials, and competitor analyses. The chief functions of the marketing committee consist of determination of sales policies, and establishment of sales forecasts, sales quotas, and sales expense budgets.

The production planning committee has as its chairman the manager of the production planning department, together with the plant manager, the director of purchases, the manager of the methods and time study department, and the comptroller. Similar to the marketing committee, this committee has subcommittee meetings over which the chairman of the production planning committee presides and reports back to the main body. The duties of the main committee involve the determination of material, personnel, and equipment requirements for production, and the establishment of operating schedules commensurate therewith.

The plant operations committee is headed by the manager of the methods and time study department, the other members being the plant manager, six area supervisors who collectively control all plant operations, and the comptroller. Details of control data for each cost center are handled through subcommittees under the guidance of the manager of the methods and time study department, and are reported back to the general committee in similar manner to subcommittee activities of the other two operating committees.

Projections

With the foregoing narration of the organization structure of Dobeckmun in mind, we now proceed with a chronological trip through the practical side of our control system, dotted here and there with exhibits of reports of the correlated activities. We have two ranges of forecasts, or projections: a long-term series, covering a full calendar year; and a short-term series, covering the next succeeding three-month period.

The long-range projections are of invaluable aid in determining and making provisions for capital requirements, as well as in set-

ting a general pattern of production throughout the year to provide for seasonal requirements. Our products are divided into two general groups; custom and stock. Custom demands, of course, must be met as they arise. This means that the pattern of custom requirements by months must be determined as carefully as possible, since a definite allocation of materials to custom use must be established in advance and plotted by products by months. Our projection of production schedules can then be leveled off by months by filling in with the stock items. The far-reaching effects of such long-range planning can readily be understood.

Both series comprise a set of similar projections, which we will enumerate as we proceed. The projections for the ensuing calendar year are completed and approved by our management committee on or before December 31, while the short-term series is completed and approved by the twenty-fifth of the current month for the ensuing three-month period.

Material Availability Report

Exhibit 1 is the material availability report. At the top of this sheet, as well as at the top of every report form, is listed the party responsible for its preparation, the deadline date it must be completed, and the committee or committees to whom it is to be presented. Of course, in any instance reports may be submitted prior to the deadline date, and I might say this situation frequently occurs. When such due date falls on a Saturday or Sunday, the report is to be submitted by 8:30 of the following Monday morning, and when it falls on a holiday, by 8:30 of the next weekday morning.

Under today's conditions, when sales and production are controlled to a great extent by availability of materials, our first step must be to determine the quantity of each of the major materials which the director of purchases forecasts will be available during the current and next succeeding three months. Actually, by the fifth of the current month, which is the due date of this report, he has already made his purchase commitments for at least this and the following month and can give a fairly accurate report of receipt expectancies for this two-month period. Copies of this report, as indicated on the form, are submitted to the marketing and production planning committees.

Finished Goods Inventory Report

The finished goods inventory report (Exhibit 2) supplements the raw material availability report already submitted and facilitates the work of the production planning committee in setting up production schedules for the ensuing month. This report covers only the estimated inventories at the end of the current month, is made up by the comptroller, and is submitted to the production planning committee by the tenth of the month. The standard manufacturing cost of the estimated work-in-process inventory is divided by a working average unit standard cost for the respective products, to arrive at estimated units in that section of the inventory. This, plus the units in the finished goods section, gives the estimated total number of units in inventory at the beginning of next month.

Sales Projections

With a knowledge of raw material availability during the next three months in its possession, the marketing committee is in position to prepare its sales projections by product (Exhibit 3) for the

MATERIAL AVAILABILITY REPORT
(Units)

Months of ..... 19....

From: Director of Purchases — Date due 5th

To: Marketing Committee
Production Planning Committee — Submitted .....

COMMODITY	PROJECTED RECEIPTS			
	(Month)	(Month)	(Month)	(Month)

EXHIBIT 1

same period, to be turned over to the production planning committee by the tenth of the current month. Definite consideration is given to the annual pattern of distribution between custom and stock items so as not to permit such pattern to become unduly unbalanced. It is to be noted that sales by products are by units as well as by values. This point is very important. We have established standard units of measure in connection with every product. In like manner,

FINISHED GOODS INVENTORY REPORT
(Units and Std. Mfg. Costs)

Months of ..... 19....

From: Comptroller Date due 10th

To: Production Planning Committee Submitted .....

PRODUCT	WORK IN PROCESS		FINISHED GOODS	
	Costs	Est. Units	Units	Costs
CUSTOM ITEMS				
STOCK ITEMS				

EXHIBIT 2

we have established standard sales values per standard unit of measure. At a later point we will discuss our method of accounting for variances which occur between standard and actual sales values per standard unit of measure.

Production Schedules

With the sales projections available and a forecast of inventories at the end of the current month, the production planning committee prepares the production schedules by products (Exhibit 4) for

SALES PROJECTIONS BY PRODUCTS
(Units and Values)

Months of ..... 19....

From: Marketing Committee Date due 10th

To: Production Planning Committee Submitted .....

PRODUCT	(Month)		(Month)		(Month)	
	Units	Values	Units	Values	Units	Values
CUSTOM ITEMS						
STOCK ITEMS						

EXHIBIT 3

PRODUCTION SCHEDULES BY PRODUCTS
(Units)

Months of ..... 19....

From: Production Planning Committee Date due 14th

To: Marketing Committee Submitted .....
Plant Operations Committee

PRODUCT	STANDARD PRODUCT UNITS		
	(Month)	(Month)	(Month)
CUSTOM ITEMS			
STOCK ITEMS			

EXHIBIT 4

the next three months, to be submitted by the fourteenth of the month to the marketing and plant operations committees. These production schedules follow the same standard units of measure by products as shown in the sales projections.

Sales Quotas

With the receipt of the production schedules, the marketing committee must adjust its original sales projections for the next three months to incorporate any deviations which the production schedules make imminent. From these final sales projections, the marketing committee can now establish sales quotas by territories (Exhibit 5) for the next three months. However, our field representatives are given their quotas for the next month only. The reason for a limit of one month only is a current situation. Remembering that we have already set up territorial sales quotas with them for the full year, when we come down to the specific month this becomes more of a current allocation, after we have an opportunity to give consideration to actual cumulative sales by territories to date.

We have in general two outlets of distribution: direct sales representatives (who are on a salary-plus-special-compensation basis), and direct sales agents (who are on a straight commission basis). Therefore it is imperative that a proper balance of distribution be maintained between these two general channels. Most of our stock

items are distributed through jobber organizations, with a spotty inclusion of super-jobbers who in turn sell to the jobbers. These super-jobbers, of course, receive a special discount from jobbers' list prices, to which we will refer in a moment. These reports, then, are to be turned over to the comptroller by the eighteenth of the month.

Sales Expense Projections

Simultaneously with its preparation of sales quotas by territories, the marketing committee or its subcommittees (as is generally necessary) can prepare the sales expense projections by territories (Exhibit 6) for the next three months, which is also to be submitted to the comptroller by the eighteenth of the month. We do not pretend that we have a scientific set of standards for measuring the effectiveness of our selling expense. For one thing, prewar data were thought to be insufficient to meet our more scientific approach to the whole problem of distribution. The war period offered no practical solution, as we can all appreciate, because of the abnormality of those years. But lack of scientific measurement does not prevent the development of such standards. Here again I want to emphasize the great part teamwork plays in approaching such a problem. The will to accomplish is the parent of the method, and so we have mutually set arbitrary standards which our coordinated efforts are constantly seeking to improve. The two items which make up the greater part of field selling expense are salesmen's compensation and traveling expense. As indicated previ-

SALES QUOTAS BY TERRITORIES
(Values)

Months of ..... 19....

From: Marketing Committee — Date due 18th

To: Comptroller — Submitted .....

TERRITORY	(Month)		(Month)		(Month)	
	Custom	Stock	Custom	Stock	Custom	Stock
DIRECT REPRESENTATIVES						
DIRECT AGENTS SUPER-JOBBERS						

EXHIBIT 5

ously, establishment of distribution by channels provides effective control over commission expense to our agents. We have a similar control of sales through super-jobbers, wherein we classify special discounts given to them as memorandum direct selling expense in our control system. Any differences between list prices of our products and net prices received, involving special prices, rebates, or refunds (but not including, of course, returns or other allowances), are also treated as memorandum selling expense in our control system. This has the effect first, of giving us the list sales value of our shipments, and second, of driving home the cost relationship of these price privileges to other direct sales costs.

SALES EXPENSE PROJECTIONS

Territory .....

Months of ..... 19....

From: Marketing Committee Date due 18th

To: Comptroller Submitted .....

ITEM	(Month) (Sales Quota)	(Month) (Sales Quota)	(Month) (Sales Quota)

EXHIBIT 6

As for our salaried sales personnel, more or less as an outgrowth of salary stabilization requirements during the war we have established a salary schedule throughout our organization which classifies minimum and maximum ranges for every occupation under a job evaluation system. We believe our rates lean a little on the high side of area and industry comparisons but this policy synchronizes with our effort to attract satisfactory talent. We have a fixed policy of probationary period requirements, wherein salary adjustments are somewhat automatic for those employees who qualify within our standards of expectation. Thereafter there is a somewhat arbitrary set of progress rules under which individuals may move upward, but in no case can they exceed the maximum salary of that particular job. Promotions from one class to another, of course, are possible when such vacancies in a higher-rated class occur. Beyond this there is a bonus plan, which will be touched upon a little later.

Traveling expense standards have been established by territories, rather than by over-all comparisons to sales or other arbitrary methods. However, these standards are divided into two segments; one segment might be classified as fixed (or minimum), and the other segment a direct variable related to net sales quota. The fixed portion is generally the larger of the two. It is not our intention to maintain too rigid a clamp on this item of expense with respect to the individual salesman, but there is extreme cooperation on the part of everyone involved and we are alert to the cumulative experience of the individual.

Prime Cost Projections

Next we move along to a series of exhibits having to do with our manufacturing cost projections. The first of these is a schedule of standard product prime cost factors (Exhibit 7). As noted, these factors cover only prime costs, that is productive materials and productive labor. Materials are analyzed by net materials and waste materials by commodity, and are shown for quantity, commodity unit price, and cost value per unit of product. Labor is listed by operations, and is in standard machine hours per unit, standard labor base rates per machine hour, and standard labor cost per unit of product. These standard base rates make no pro-

STANDARD PRODUCT PRIME COST FACTORS

Product .....

Established ..... (Date) .....

ITEM	Standard Quantity or Machine Hours	Base Price or Rate	Standard Cost Factor
NET MATERIALS (Commodity)			
WASTE MATERIALS (Commodity)			
PRODUCTIVE LABOR (Operation)			
Total Standard Unit Prime Cost			

EXHIBIT 7

vision for night premium or overtime earnings. These latter costs are included in the manufacturing expense projections. The development of manufacturing standards at Dobeckmun represents the same struggle that everyone has experienced many times in the past. These standard prime cost factors, plus absorption of manufacturing expense at standard machine rates established at the beginning of the year, yield a set of standard manufacturing costs for every product.

The total number of units shown in the production schedule, multiplied by the standard product prime cost factor, is posted to the schedule of prime cost projections by products (Exhibit 8) for

PRIME COST PROJECTIONS BY PRODUCTS
(Standard Costs)

Months of ..... 19....

From: Plant Operations Committee Date due 18th

To: Comptroller Submitted .....

PRODUCT	(Month)		(Month)		(Month)	
	Unit	Total	Unit	Total	Unit	Total
CUSTOM ITEMS						
STOCK ITEMS						

EXHIBIT 8

the next three months. This report is submitted to the comptroller on or before the eighteenth of the month by the plant operations committee.

Manufacturing Expense Projections

Of necessity there is considerable subcommittee work involved in the preparation of the manufacturing expense projections by cost centers, as shown in Exhibit 9. Standards of nonproductive or service labor requirements are drawn from occupational charts in accordance with the total standard hours of the related factor in the production schedule. Practically all our service labor is measured on a sliding scale, on the basis of volume, by machine hours, and is extended at standard base rates established for the particular occupation.

MANUFACTURING EXPENSE PROJECTIONS

Cost Center .....

Months of ..... 19....

From: Plant Operations Committee Date due 18th

To: Comptroller Submitted .....

ITEM	(Month) (Base Std. Hrs.)	(Month) (Base Std. Hrs.)	(Month) (Base Std. Hrs.)
SALARIED PERSONNEL			
SERVICE LABOR			
SERVICE MATERIALS			
OTHER EXPENSES			
TOTAL MFG. EXP. ABSORBED AT STD.			
UNABSORBED EXP.			

EXHIBIT 9

In like manner we have standards for base supervisory requirements, as well as most of the other items in the manufacturing expense. Inasmuch as each cost center has its own set of charted standards you can understand why subcommittees are active on this work. The master report of manufacturing expense projections for the next three months also is completed and in the hands of the comptroller by the eighteenth of the month.

Shipping and Administrative Expense Projections

Projections of shipping expense which is treated as just another cost center in the plant operations committee's reports are submitted simultaneously with the other manufacturing projections.

Exhibit 10 covers administrative expense projections by functions. This series of reports is made up for each function in our administrative division for the next three months by the managers of the respective groups, and is generally measured from a set of flexible standards as related to gross sales volume. These reports also are to be turned in to the comptroller by the eighteenth of the month.

ADMINISTRATIVE EXPENSE PROJECTIONS

Function .....

Months of ..... 19....

From: (Manager of Function) Date due 18th

To: Comptroller Submitted .....

ITEM	(Month) (Sales Proj'n)	(Month) (Sales Proj'n)	(Month) (Sales Proj'n)

EXHIBIT 10

Projected Statement of Profit and Loss

With all projections in his hands by the eighteenth of the month, the comptroller is now ready to prepare the projected statement of profit and loss (Exhibit 11) for the three-month period being covered.

As in all our control reports, gross sales are at list price values and represent the standard unit of measure for each product taken from the sales projection, multiplied by the product unit standard sales value. The standard cost of sales is obtained by multiplying these same units of measure in the sales projection by the product unit standard cost. Unabsorbed manufacturing expense comes from the manufacturing expense projections. Shipping expense, other selling expense, and administrative expense come from the respective reports covering these items.

The remainder of the items on this report not specifically referred to are taken from standard charts for the item. The items representing deductions from sales, as well as jobbers' discounts and special price concessions, are all related to gross sales. I might say that practically all our sales prices include delivery charges, which thus places the item of "freight out" in the category of a deduction from sales. This statement is to be submitted to the management committee by the twenty-first of the month.

The first step this committee takes before placing its stamp of approval on the projection is to determine the position of net earnings for the year to date, both before and after the three-month period covered in the statement, in relationship to the annual profit objective. As a rule if the projections for the cumulative three months do not yield a satisfactory net return the forecast for the

PROJECTED STATEMENT OF PROFIT AND LOSS

Cleveland Division

Months of ..... 19....

From: Comptroller Date due 21st

To: Management Committee Submitted .....

ITEM	(Month)	(Month)	(Month)
GROSS SALES			
DEDUCTIONS:			
Returns & Allowances			
Freight Out			
Cash Discounts Allowed			
NET SALES			
MANUFACTURING COSTS:			
Standard Cost of Sales			
Unabsorbed Mfg. Expense			
Freight In			
Less: Cash Discts. Earned			
TOTAL MFG. COSTS			
GROSS PROFIT			
MARGINAL EXPENSES:			
Shipping Expense			
Jobbers Discounts			
Special Price Concessions			
Other Selling Expense			
Administrative Expense			
TOTAL MARGINAL EXPENSES			
OPERATING PROFIT			
Miscellaneous Income & Outgo			
Miscellaneous P& L Items			
PROFIT BEFORE TAXES			
Federal Income Tax Reserve			
NET PROFIT			

EXHIBIT 11

first month is accepted, with the provision that every attempt be made to improve the projected showing for the second and third months in the period.

The last leg of our trip through this series of projections is completed when the management committee submits its approved version of profit expectancy for the ensuing three months to the board of directors on the twenty-fifth of the month.

Comparative Reports

We now move from the make-believe section of our journey to the more realistic field of actuality and see how these tools of management can perform their miracles of making profit dreams come true. You will notice that our comparative reports are all on a cumulative basis. The period covered is the current month only. Actual data, of course, are compared with the projections established and approved by the twenty-fifth of the previous month. All daily reports are completed and distributed by two o'clock of the afternoon of the second weekday following the day indicated.

Sales and Production Reports

The comparative sales report (Exhibit 12) is given to the di-

COMPARATIVE SALES REPORT

DATE ..... 19....

From: Comptroller — Date due .....

To: Director of Sales (Daily); Management Committee (Weekly) — Submitted .....

DIVISION	Cumulative To Date	Compared with Schedule	
		Ahead	Behind
PACKAGING DIVISION			
INDUSTRIAL DIVISION			
COMBINED			

EXHIBIT 12

rector of sales daily and shows how actual gross sales compare with schedule, which means simply that the month's projected sales are subdivided to show daily cumulative schedule. This form is complete as shown in the exhibit, but cumulative sales are available by products should there be a desire to determine during the month wherein variances from projections are occurring. Whereas the management committee receives a cumulative report weekly,

its members are usually kept posted daily on the cumulative sales. In addition to billings, a daily record of bookings and backlog by products is available in our statistical department.

COMPARATIVE PRODUCTION REPORT

Date ..... 19....

From: Comptroller — Date due .....

To: Plant Manager (Daily); Management Committee (Weekly) — Submitted .....

OPERATION	Cumulative To Date	Compared with Schedule	
		Ahead	Behind

EXHIBIT 13

A comparative production report (Exhibit 13) indicating production for the month versus scheduled production gives the plant manager a daily record of his cumulative position by operations. A copy of this report in condensed form goes to the management committee weekly.

Productive Labor

COMPARATIVE PRODUCTIVE LABOR REPORT

(Machine Hours)

Date ..... 19....

From: Manager of Methods & Time Study — Date due .....

To: Plant Manager (Daily); Comptroller (Weekly) — Submitted .....

OPERATION	Cumulative To Date	Compared with Standard	
		Ahead	Behind

EXHIBIT 14

Exhibits 14 and 15 are both comparative productive labor reports. The former is an efficiency rating form, comparing actual machine hours with standard time allowances, while the latter re-

flects variances of actual straight-line productive labor costs from standard cost allowances.

Individual production orders are issued to each cost center by operations. Production standards are posted to each order by our methods and time study department, indicating thereon the total standard hours for machine setup, standard units of production per machine hour, and standard material waste allowance, shown in both percentage and weight per unit of production. Machine time is in tenths of an hour, and material weights are in hundredths of a pound.

Daily production reports by shifts and individual machine operators are submitted by cost centers in duplicate to the methods and time study department. Standard machine hours for the attained production are posted to these reports alongside the actual machine hours, and the duplicate copies are resubmitted to the respective shift foremen by the end of the weekday following such production. Cumulative summaries of these comparative performances by operations are submitted daily by the manager of the methods and time study department to the plant manager on the form shown in Exhibit 14, with a copy going to the comptroller weekly.

The original daily production reports by operations are then turned over to the cost and payroll department for posting of the actual straight time productive labor costs, as well as for recording the standard labor cost allowances obtained by multiplying the standard machine hours by established machine-hour rates. Cumulative summaries of these comparative productive labor costs by operations are submitted daily by the manager of the cost depart-

COMPARATIVE PRODUCTIVE LABOR REPORT

(Straight-Time Costs)

Date ..... 19....

From: Manager of Cost Department Date due .....

To: Plant Manager (Daily) Submitted .....
Comptroller (Weekly)

OPERATION	Cumulative To Date	Compared with Standard	
		Ahead	Behind

EXHIBIT 15

ment to the plant manager on the form shown in Exhibit 15, with a copy going to the comptroller weekly.

By comparing the two reports shown in these exhibits for the same period, a balance can be maintained between machine time and base rate variances at the level of each operation. Base rate variances are obtained as follows:—

> Total cumulative actual machine hours for any given operation (Exhibit 14), multiplied by the established standard machine hour base rate for that operation, equals total cumulative straight-time costs at standard machine-hour rates. The differences between these costs and the cumulative actual costs shown on the other report (Exhibit 15) is base rate variance.

COMPARATIVE PRODUCTIVE WASTE REPORT

(% of Gross Materials Used—Completed Orders)

Date ..... 19....

From: Manager of Cost Department — Date due .....

To: Plant Manager (Daily) — Submitted .....
Comptroller (Weekly)

OPERATION	Cumulative To Date	Compared with Standard	
		Ahead	Behind

EXHIBIT 16

COMPARATIVE PRODUCTIVE WASTE REPORT

(Completed Order Costs)

Date ..... 19....

From: Manager of Cost Department — Date due .....

To: Plant Manager (Daily) — Submitted .....
Comptroller (Weekly)

OPERATION	Cumulative To Date	Compared with Standard	
		Ahead	Behind

EXHIBIT 17

Productive Waste

Comparative productive waste reports (Exhibits 16 and 17) cover cumulative data on completed orders for the current month at the level of each operation. Because the unit costs of practically all our productive materials are fairly constant, we can and do use *actual* average unit costs in our standards. Very little unit cost variances occur. If or when the situation should change our inventory control system is sufficiently flexible to afford no problem in switching over to standard unit costs. Our greatest variances in connection with material costs occur in usage. Here we have three factors:

1. The necessary use of stock wider than the net obtained in the finished product.
2. Yield variances in either the raw materials or the finished combined materials.
3. Lineal losses in production.

The first of these (the oversize stock loss) is beyond the control of the operating personnel, except as technical improvements in production requirements are developed. The second item (yield variance) is seldom within the boundaries of control by the operating people, but does come in for considerable attention on their part. The third factor (lineal waste) offers the greatest opportunity for improved unit material costs. Nearly all of the cellulose films are very difficult to handle, which naturally accounts for our almost exclusive use of specialized equipment. Comparative waste reports shown in these two exhibits are submitted to the plant manager daily, with weekly copies going to the comptroller.

Estimate of Profit and Loss

Perhaps the most dynamic report we make is the one shown in Exhibit 18, comparative estimate of profit and loss. This report is submitted weekly to our management committee and constitutes the culmination of the various data accumulated during the week. Gross sales and standard cost of sales are taken directly from our daily statistical records. The productive labor and waste variances are recorded in their respective positions, whether favorable or unfavorable in comparison with standards. Discounts from list under "marginal expenses" are actual and also taken from our records.

COMPARATIVE ESTIMATE OF PROFIT AND LOSS

Cleveland Division

Date ..... (Weekly) ..... 19....

From: Comptroller — Date due .....

To: Management Committee — Submitted .....

ITEM	Cumulative To Date	Compared with Schedule	
		Ahead	Behind
GROSS SALES			
DEDUCTIONS			
NET SALES			
MANUFACTURING COSTS:			
Standard Cost of Sales			
Other Manufacturing Costs			
Plus: Unfavorable Variances:			
Productive Labor			
Productive Waste			
Less: Favorable Variances:			
Productive Labor			
Productive Waste			
TOTAL MFG. COSTS			
GROSS PROFIT			
MARGINAL EXPENSES:			
Discounts from List			
Other Marginal Expenses			
TOTAL MARGINAL EXPENSES			
OPERATING PROFIT			
MISCELLANEOUS ITEMS			
PROFIT BEFORE TAXES			
Federal Income Tax Reserve			
ESTIMATED NET PROFIT			

EXHIBIT 18

The item of "other manufacturing costs", involving primarily unabsorbed manufacturing expense, is recorded on the basis of a sliding ratio between actual and scheduled cumulative production by operations. All the other items shown on this form are reset from our standard charts in accordance with related actual cumulative base data, and merely contemplates that standards adjusted to actual volume ratios will be met.

This estimate of profit and loss is presented to the management committee at its regular Monday meeting and covers the period from the first of the month through the previous Wednesday. It is truly the grinding wheel of our management's tools and, because it is current, offers a most effective medium for determining when collective action is required.

Statement of Profit and Loss

When the sales and standard cost of sales covering the last shipping day of the month are completed, a revised projection of profit and loss is made up for the month just ended, giving recognition to the attained gross sales. This revised statement is matched with the original projection, as shown in Exhibit 11, and gives management the true effect of sales variances on profit expectancies.

When the actual profit and loss statement for the month is ready it is set up in the third column of a six-column report, the original and revised projections being in the first and second columns. All differences between the revised projection and the actual statement which have a favorable effect on profit are recorded in the fourth column under "Favorable Variances"; while other differences are shown in the fifth column called "Unfavorable Variances." Major variances both favorable and unfavorable are indicated in the sixth column and are then submitted to the management committee by the comptroller.

Historical Reports

It is at this point in our control system at Dobeckmun that our assistant comptroller takes over. This situation, I believe, is only another illustration of the spirit of teamwork prevalent in our company. It has always been my opinion that historical data serve their best purpose when used as a guide to the future. My philosophy is that what has transpired can only be viewed in the perspective of "what might have been." Therefore a perfect team is formed. With the responsibility of preparing comparative historical reports for every cost center, sales territory, and other functions in the capable hands of my assistant and his staff, I can devote my time and energies to the fruitful task of aiding management in planning for the future.

ARE SERVICE DEPARTMENT COSTS TAKEN FOR GRANTED?

by ARTHUR T. CARUSO, Principal,
McKinsey & Co., Boston, Mass.

THERE seems to be a real need today for focusing more attention on the problem of controlling those nonproducing costs commonly labelled "service department expenses." Judging from the attitude of many top management executives and, unfortunately, many cost accountants as well, one would get the impression that dollars spent for service departments are less important than those spent for producing departments. This attitude has naturally brought about a "necessary evil" complex that has had the effect of lulling management into complacency with respect to these costs.

Importance of Service Departments

It is reasonably certain that most business executives are fully aware of the fundamental changes wrought in American industry during the throbbing years of this twentieth century. To name but a few of these changes: there is the introduction of so-called mass production methods; there is the shift from owner-managed companies of modest size to industrial corporations comprising many units and directed largely by professional managers; and more recently there is the increasing growth of the labor movement with its attendant problems of mutual understanding and benefits. Now these basic economic developments have a common characteristic in that they necessitate a high degree of specialization and integration if successful operations are to be assured.

Service departments are established as a reflection of this need for specialization and integration. Surely no company of respectable size would think of operating without its own power plant if electricity were an important factor in its manufacturing processes. Efficient repair and maintenance crews are an accepted part of well-knit business organizations. Such functions as production planning, various types of engineering, personnel relations, cost accounting, and many other service activities form an essential segment of progressive companies, with important executives in charge.

This trend is continuing into even higher realms of business organization. There is increasing evidence of staff, or service, activity surrounding the offices of top management officials concerning

the analysis, interpretation, and coordination of company operations. Present and future technological changes are bound to bring about even further expansion of the service phases of business. Obviously these services entail large expenditures of money. Thus they offer both a challenge and an opportunity for controlling them wisely and effectively.

Cost Accounting Requirements

Before proceeding with a discussion of control methods it might be well to dispose of the cost accounting implications inherent in the treatment of service department costs. Primarily, cost accounting is involved with the task of determining accurate product costs. In order to accomplish this purpose where service departments are concerned, it is necessary to collect this type of expense at appropriate functional points. Such accumulations are then redistributed to producing departments on some equitable basis, since burden cost is applied to products through the medium of producing points only.

Many factors are involved and must be considered in executing the foregoing process, the most important of which are:

1. Policy as to product line—single or multiple
2. Nature of services rendered
3. Bases of distribution
4. Sequence of distribution

The underlying point in this matter of service department expense is, however, that the basis of distribution finally selected, assuming that it is reasonably sound and practical, cannot exert too great an influence on the final unit cost of product. First of all, many bases are of necessity arbitrary in character if a practical approach is to be maintained. Second, the total amount of given service department expense is usually allocated to a large number of producing departments. This results in a charge to a single producing department which is ordinarily not sufficiently large to affect the burden rate for that department to any great extent. Finally, the application of a producing department's burden cost to a specific product processed at that point virtually reduces influence on the product unit cost to a matter of decimal points; hardly important enough to steer management into the making of unsound policy decisions.

Setting the Stage for Control

It is a truism that any problem is more readily solved if broken down into homogeneous segments. This process makes it possible to deal with a problem in logical and direct fashion. With respect to service departments, it is necessary to take an inventory of the services rendered with particular emphasis on their nature. This approach will usually indicate a division of all services into these three groups:

1. Services rendered at the discretion of the service department supervisor (personnel relations and production planning).
2. Services supplied automatically through continuous demand (power and steam).
3. Services requested by other departments (repairs and crane operation).

The purpose of this analysis is to see what essential equipment or procedure must be provided, if not already available, in order to secure basic data required for control. Obviously, services falling into the first group cannot easily be measured and must, therefore, be apportioned to other departments on some fair and equitable basis developed after a careful study of the normal activities of the personnel engaged in the departments rendering such services. Having established equitable bases for these items (number of employees, man hours, etc.) steps should then be taken to see that the required basic information is made available at the time it is needed for allocating this type of service expense.

The use of services falling into the second group can actually be measured provided suitable metering devices are installed at strategic points in the manufacturing process. Too much emphasis cannot be placed on the importance of seeing that action is taken in this regard if management is truly serious about controlling these items; assuming always, of course, that this type of service cost bears an important relationship to total burden cost in the specific case under consideration.

Services classified under the third group usually require the establishment of adequate time reporting procedures in order to provide an accurate basis for charges to those departments which requisition such services. Here again it is rather futile to speak of controlling the expenses of these service departments unless proper

provision is first made for obtaining the basic time information required for control.

A note of caution should be sounded at this point. None of the preceding comments is intended to act as a substitute for clear thinking and good judgment relative to the specific problem at hand. If, for example, a company's own staff supplies only a small fraction of its repair needs for some good reason, and the total money involved thereby is not relatively important, not much is to be accomplished by insisting on a detailed time-reporting procedure. In such a case, a special study could be undertaken so as to predetermine a set of percentages which would represent a typical distribution of such charges. This procedure would not affect materially either (a) the accuracy of unit cost determination or (b) the adequacy of expense control.

Applying Budgetary Control Principles

Undoubtedly, budgetary control is the best means at management's disposal for securing effective coordination and control of its operating activities. The use of this technique forces responsible executives to give serious attention to the matter of planning and then to see that the plan established is put to work.

It is a fact that in the final analysis control rests with people, not with forms or techniques which are merely the tools of control. If this is true, then it follows that for control to be truly effective a basic requirement is the delegation of responsibility, undivided and clearly understood. Accordingly, every service department should be made to stand on its own feet if it is to demonstrate the efficiency of its own management.

The idea of budgetary control is fairly universally extended and applied to producing departments, but experience shows a definite restraint on the part of those in authority to apply this same technique to service departments. The failure to apply the budgetary control approach to service functions may be due to a variety of reasons, but it is reasonable to suspect that full realization of the growing importance of this type of expense is not widely understood.

Perhaps it would be both interesting and significant to analyze the total overhead involved in any given case and determine the breakdown between service and producing functions. A recent analysis of this nature covering a large number of corporations disclosed the startling fact that the cost of service functions, exclusive

of sales activities, ran anywhere from 25 to 40 per cent of the total burden. Certainly, if this condition is even approximately representative, a fresh viewpoint appears to be in order toward service department expenses, with the object in view of developing practical and effective means for closer control of them.

Translating Principles into Action

The establishment of a normal budget for service departments follows basically the same routine commonly used for producing departments. Admittedly, the procedure may be somewhat more complex than that used for producing departments because of the intangible nature of some of the service functions. Objectively, however, the approach is the same; namely, the estimating of each element of expense on some equitable basis in terms of the respective service functions required to produce the established normal volume of goods.

Wherever possible standard, or normal, rates should be determined per unit of service rendered in order to provide both unit cost data and a basis for distribution to other departments. This is possible, for example, with such service departments as:

1. Power plant—Rate per K.W.H.
2. Steam plant—Rate per 1000 lbs. of steam
3. Repair shop—Rate per man hour
4. Building service—Rate per sq. ft. of floor area

Service departments which do not lend themselves to this method of treatment (e. g., production control, personnel, cost accounting, etc.) because their contributions cannot be fairly and economically measured on a rate basis require a somewhat different approach as to redistribution to other departments, but basic control features can still be retained.

Periodic Procedure to Obtain Control Data

These fundamental steps should be taken at the close of each accounting period:

1. Adjust the normal budget to reflect allowed expense at current activity levels.
2. Where unit cost rates are available, calculate the expense earned by extending the units of service produced and rendered at the standard rates, crediting the service de-

partment rendering the service and debiting the departments receiving the service.

3. Where unit cost rates are not available, allocate the *adjusted normal budget* to other departments on some equitable basis previously developed through study and analysis.

Two broad avenues of attack are open for developing the adjusted normal budget of a given service department. First, a department which renders a measurable service covering specialized labor or equipment on a time basis, or produces an item like steam or electricity measurable on a metered basis, should be considered in comparison with its own normal output. On the other hand, a department rendering a service not easily measured in terms of its own output should be geared to some index of normal plant activity developed to fit the particular service function. The subject of flexible or variable budgeting in all its details is a treatise in itself on which much literature is available. It requires no further comment here other than to direct attention to the above basic approach concerning service departments in particular.

Periodic Statements for Control

The foregoing procedure makes it possible to draw off an operating statement for each service department which summarizes its actual performance in comparison with anticipated results. Exhibit 1 is a specimen statement typical of a service department whose output is measurable, while Exhibit 2 typifies a service department whose output is not readily measurable but which receives credit on some equitable allocation basis.

Let us consider for a moment the interpretation of the key data supplied on these statements. In each case the actual individual expense items making up the total operating cost are compared, item by item, with the current budget allowed. The resulting variance is an excellent guide in appraising the supervisor's ability to maintain a high degree of alertness regarding expenditures.

In the case of departments falling within the category of Exhibit 1 the unabsorbed expense total is an indication of the extent to which the supervisor has utilized the facilities and manpower at his disposal. In addition, the production and unit cost data at the bottom of the statement (Exhibit 1) provide a quick and simple reference concerning the trend of these two important factors. As will be seen from reference to Exhibit 2 this type of service de-

OPERATING STATEMENT
POWER PLANT

Supervisor—John Jones — *Period Ended—April 27, 1946*

This Period				Year to Date		
Actual	*Budget*	*Variance*	*Expense Items*	*Actual*	*Budget*	*Variance*
$ 550	500	(50)	Supervision	$ 2,400	2,000	(400)
1,090	1,000	(90)	Operating Labor	4,150	3,600	(550)
30	25	(5)	Compensation Insurance	105	90	(15)
55	45	(10)	Social Security Taxes	180	150	(30)
30	20	(10)	Lubricants	90	75	(15)
40	50	10	Purchased Repairs	120	200	80
540	600	60	Steam	1,980	2,300	320
800	800	—	Taxes, Insurance, Depreciation (and so on)	3,200	3,200	—
3,135	3,040	(95)	Total Expense	12,225	11,615	(610)
2,850	2,850		Expense Earned (K. W. H. x .015)	11,025	11,025	
	(190)		Unabsorbed Expense		(590)	
($285)			Unabsorbed Expense and Variance	($1,200)		
190,000	202,000	(12,000)	K. W. H. Produced	735,000	774,000	(39,000)
$ .0165	.015	(.0015)	Rate per K. W. H.	$ .0166	.015	(.0016)

EXHIBIT 1

OPERATING STATEMENT
PRODUCTION PLANNING

Supervisor—James Jackson — *Period Ended—April 27, 1946*

This Period Actual	*This Period* Budget	*This Period* Variance	*Expense Items*	*Year to Date* Actual	*Year to Date* Budget	*Year to Date* Variance
$1,200	1,200	—	Supervision	$ 4,800	4,800	—
1,300	1,000	(300)	Expediters	4,700	3,900	(800)
2,200	2,000	(200)	Clerks	8,300	7,500	(800)
40	100	60	Stationery and Printing	260	400	140
30	50	20	Association Memberships	140	200	60
50	200	150	Travel Expense	900	800	(100)
60	75	15	Telephone	210	300	90
500	500	—	Building Service (and so on)	2,000	2,000	—
5,380	5,125	(255)	Total Expense	21,310	19,900	(1,410)
5,125	5,125		Expense Allocated	19,900	19,900	
($255)			(Loss) or Gain (detailed above)	($1,410)		

EXHIBIT 2